CONTINUITY SHEET FOR REEL #4
ELEMENTS OF THE AUTOMOBILE.

M T Part 4.

M T The Bray Pictures Corporation
presents
"ELEMENTS OF THE AUTOMOBILE"
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M T Produced for
The Education
And Recreation Branch
General Staff
under the supervision
of the
Motor Transport Division
Quartermasters Corps
United States Army.

M S The Engine (Continued)

Sub A complete cycle of action therefore, consists of four distinct strokes of the piston.
(1) Intake.stroke

Sc 1 Close up of one cylinder engine. Piston goes down sucking in gas. Pause.

Sub (2) Compression.stroke

Sc 2 Close up of one cylinder engine. Cylinder full of gas. Piston goes up, forcing the gas out. Pause.

Sub (3) Power stroke.

Sc 3 Close up of one cylinder engine. Gas compressed. Explosion takes place, forcing Piston down. Pause.

Sub (4) Exhaust stroke.

Sc 4 Close up of one cylinder engine. Piston down. Cylinder full of gases (burned). Piston goes up, forcing out gas. Pause.

Sub As soon as one cycle is completed another cycle begins.
(1) Intake.

Sc 5 Pause. Piston goes down, sucking in a fresh charge. Pause.

Sub (2)Compression.

Sc 6 Pause. Piston compresses gas. Pause.

Sub (3) Power.

Sc 7 Pause. Piston goes down on power stroke. Pause.

Sub (4) Exhaust.

Sc 8 Pause. Piston goes up forcing out burned gases. Pause.

Sub See if you can name the strokes as they appear.

Sc 9 Piston draws in new charge. Pause. Dissolve to question mark. Dissolve to engine. Action of compression. Dissolve to question mark. Dissolve to engine. Power stroke shown. Dissolve to question.mark. Dissolve to engine. Piston goes up forcing out exhaust gases. Dissolve to question mark.

Sub The complete action.

Sc 10 Complete action several times.

Sub We have seen that in order for the engine to work, each valve must open at a certain, and definite, time.

Sc 11 Action of piston and valves (no gas). Action for several cycles.

Sub In order to understand the operation of the valves, it is necessary to thoroughly understand the meaning of the <u>cycle</u>.

Sub A cycle consists of four strokes,
(1) Intake.
(Intake valve opens.)

Sc 12 One cylinder engine. Pointer indicates intake valve. Piston goes down, intake valve opens admitting gas.

Sub (2) Compression.
(Both valves tightly closed.)

Sc 13 Close up of one cylinder engine with cylinder filled with gas. Pointer indicates that both valves are closed. Piston goes up compressing gas.

Sub (3) Power.
(Both valves are tightly closed.)

Sc 14 Close up of one cylinder engine. Both valves are closed and combustion chamber full of compressed gas. Pointer indicates that both valves are closed. Action of explosion.

Sub — (4) Exhaust.
(Exhaust valve opens.)

Sc 15 — Pointer indicates exhaust valve. Piston goes up forcing out burned gas.

Sub — Each valve is lifted by a cam.

Sc 16 — Intake cam dissolves in. Plunger and spring for intake dissolve in. Piston stationary. Cam makes several revolutions, lifting intake valve. Exhaust cam, plunger and spring dissolve in. Action of cam making several revolutions.

Sub — The shaft that the cam is mounted on is called the camshaft.

Sc 17 — Camshaft extensions dissolve in. Pointer indicates both.

Sub — For every opening of a valve there must be one revolution of the camshaft.

Sc 18 — One revolution of intake cam. Pause. Then one revolution of the exhaust cam.

Sub — A valve opens once in a cycle, as shown before.

Sub — Therefore a camshaft makes one revolution in a cycle.

Sc 19 — One revolution of intake cam.

Sub — The crankshaft makes two revolutions during each cycle.

Sc 20 — Pointer indicates crankshaft. Action of two revolutions, cam remaining stationary.

Sub — Therefore, while the crankshaft is makin two revolutions--

Sc 21 — Action of two revolutions, cams remaining stationary.

Sub — -- a camshaft is making one revolution

Sc 22 — Action of intake cam making one revolution.

Sub — In other words, the crankshaft travels twice as fast as the camshaft. This 2 to 1 action is obtained by gears.

Sc 23 — Crankshaft gear dissolves on. Intake camshaft gear dissolves on. Action of several revolutions without gases.

Sub — Watch the indicators.

Sc 24 — Indicators dissolve in. Action of one revolution. Pause. Numbers flash in. (1 and ½) Flash out numbers. An-

Sc 24 cont.	other revolution. Numbers 2 and 1 flash in. Action is repeated several times without numbers.
Sub	The other camshaft is operated in the same way.
Sc 25	Exhaust gear dissolves in with indicator while ~~indicator~~ intake gear dissolves out. Action of two revolutions, numbers 1 and 2, flash on. Indicators dissolve off while intake gear dissolves on. Action of several revolutions.
Sub	The complete action.
Sc 26	The complete action from low to high speed.
Sub	The speed of the engine just shown is only 200 revolutions per minute. An ordinary engine may make as many as 2,000 revolutions per minute.
Sc 27	Cartoon of two men carrying a sign which reads as follows:
Sub	End of Part 4.

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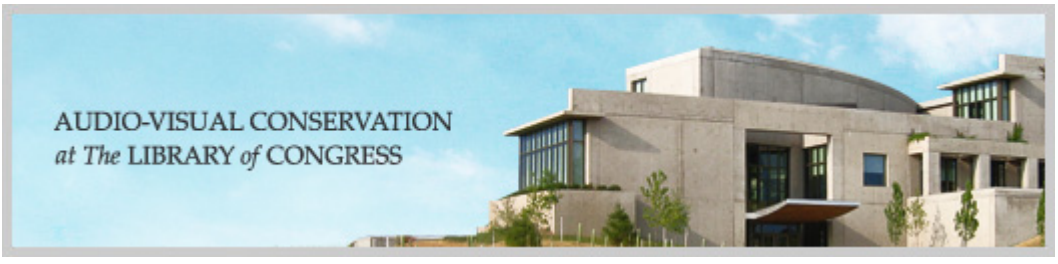

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